

HVAC DRAWINGS FOR: LINCOLN EQUITIES BUILDING B SOUTHEAST, NY

DESIGNER / BUILDER

ARCO

**DESIGN/BUILD
INDUSTRIAL**

44 SOUTH BROADWAY, SUITE 1003
WHITE PLAINS, NY 10601

P: 914.821.5535 F: 914.306.6010

ADBI | DESIGN SERVICES

PROJECT TITLE
**LINCOLN
EQUITIES -
NY-312 -
BLDG B**
NY-312 & PUGSLEY RD
SOUTHEAST, NY 10501

ARCHITECT
ADBI / DESIGN SERVICES LLC
44 SOUTH BROADWAY, SUITE 1003
WHITE PLAINS, NY 10601

CIVIL ENGINEER
LANGAN ENGINEERING
300 KIMBALL DRIVE
PARSIPPANY, NJ 07054

STRUCTURAL ENGINEER
SMITH/ ROBERTS AND ASSOCIATES, INC.
6501 BLUFF RD.
INDIANAPOLIS, INDIANA 46217

MECHANICAL ENGINEER
NATIONAL DESIGN/ BUILD SERVICES
11840 BORMAN DRIVE
ST. LOUIS, MO 63146

ELECTRICAL ENGINEER
FBX ENGINEERING
5 CHRISTY DRIVE, SUITE 307
CHADDS FORD, PA 19317

PLUMBING ENGINEER
MCCARTHY ENGINEERING ASSOCIATES,
INC.
315 EAST SECOND STREET

FIRE PROTECTION ENGINEER
S A COMUNALE CO. INC.
2900 NEWPARK DRIVE
BARRERTON, OH 44203

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KEY PLAN

N

TRUE NORTH

N

PROJECT NORTH

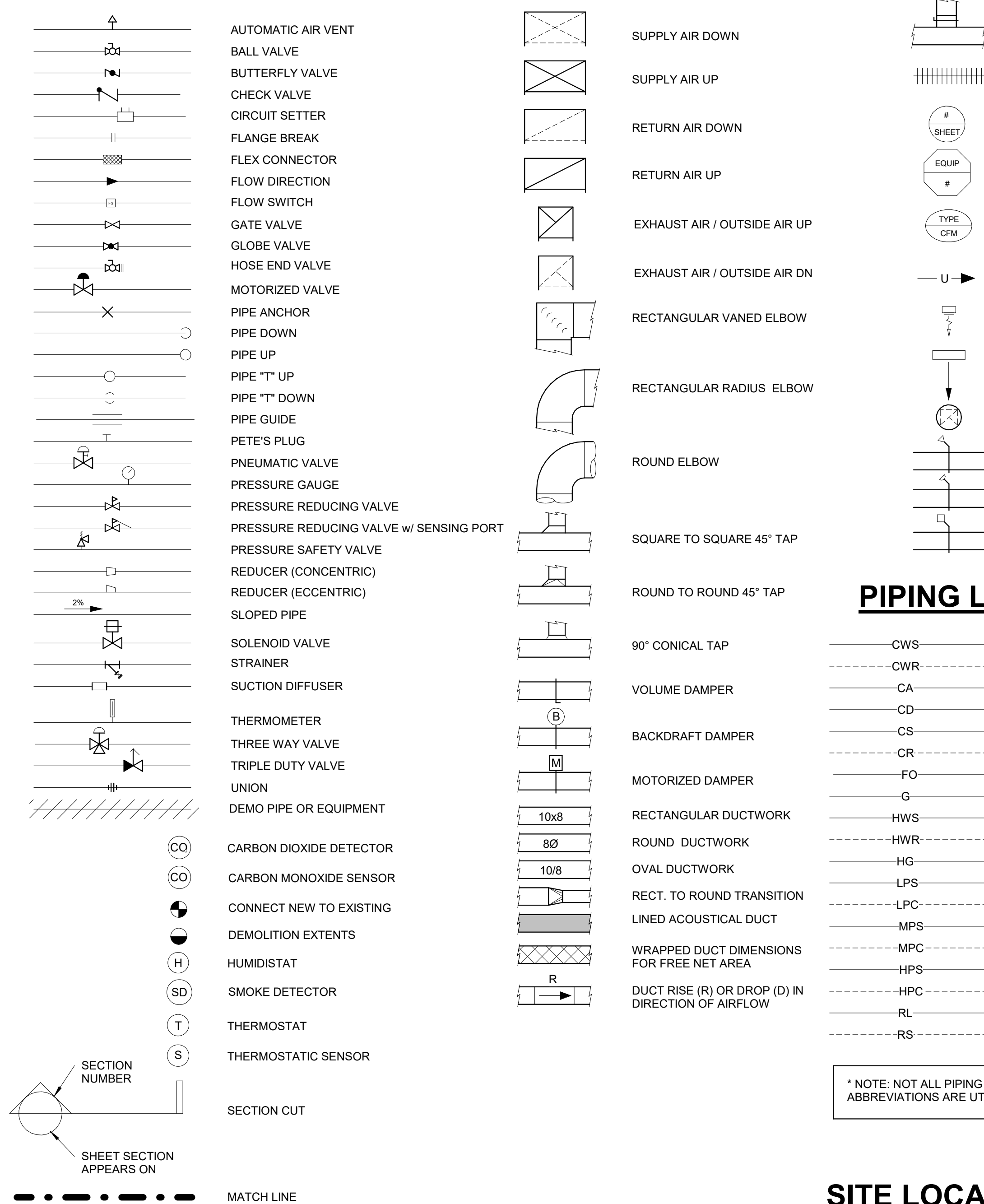
SUBMITTALS		
NO.	DATE	DESCRIPTION
A	02/04/2022	QA/QC SET
B	03/29/2022	QA/QC SET
C	05/20/2022	QA/QC SET
D	06/16/2022	PERMIT SET
E	07/25/2022	BID REVIEW SET
F	08/05/2022	BID SET

PROJECT NO.	DRAWN BY
J22006	MT

SHEET TITLE

SHEET NO.

M000

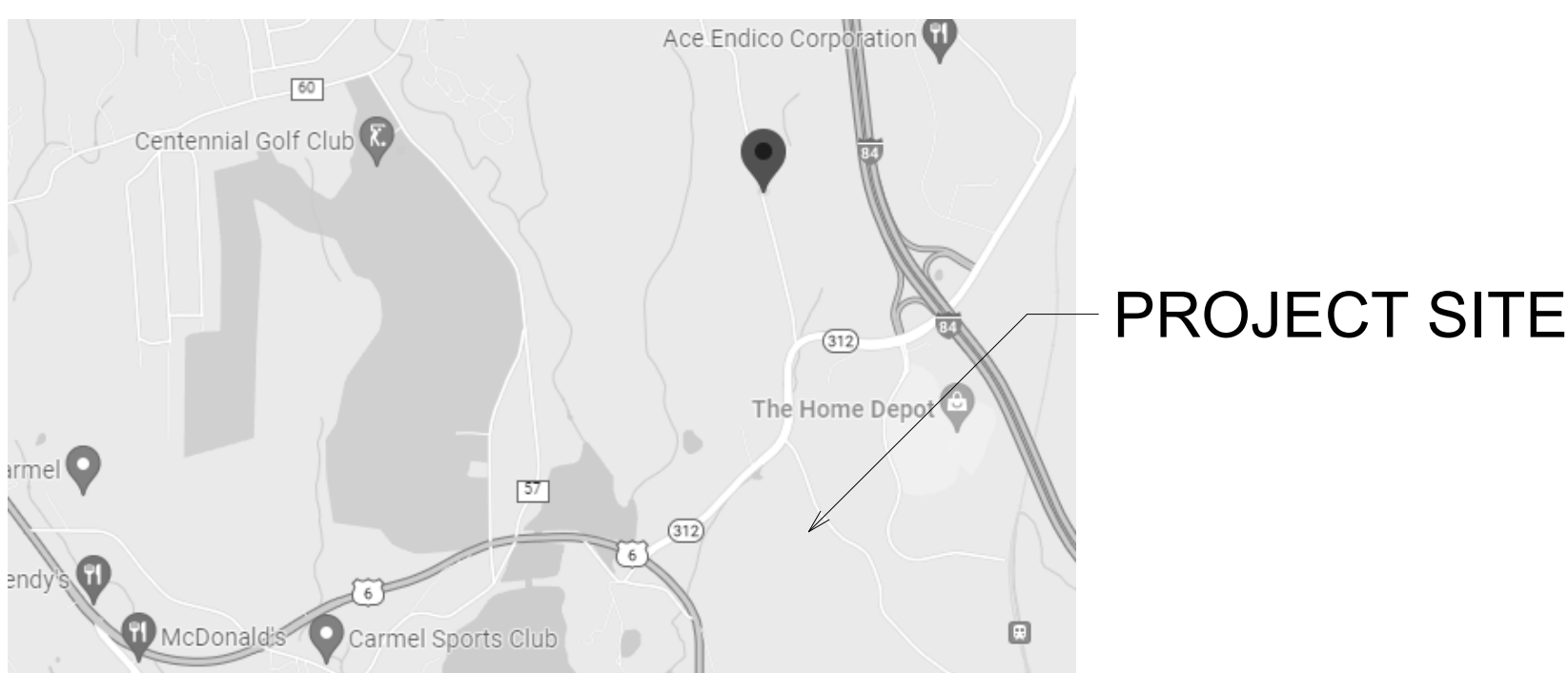


PIPING LINE TYPES

CWS	CHILLED WATER SUPPLY	DDH	DESICCANT DEHUMIDIFICATION UNIT
CWR	CHILLED WATER RETURN	DISC	DISCONNECT
CA	COMPRESSED AIR	DN	DOWN
CD	CONDENSATE DRAIN PIPING	DOAS	DEDICATED OUTSIDE AIR SUPPLY UNIT
CS	CONDENSER WATER SUPPLY	DP	DEW POINT
CR	CONDENSER WATER RETURN	DX	DIRECT EXPANSION
FO	FUEL OIL	E	EXHAUST AIR
G	GAS PIPING	EAT	ENTERING AIR TEMPERATURE, (°F) (db)/WB
HWS	HEATING WATER SUPPLY	EBBH	ELECTRIC BASEBOARD HEATER
HWR	HEATING WATER RETURN	EEL	ELECTRICAL WORK CONTRACTOR
HW	HEATING WATER	EF	EXHAUST FAN
HC	HEATING COIL	ECM	ELECTRONICALLY COMPUTATED MOTOR
HM	HEATING MEDIUM	EMS	ENERGY MANAGEMENT SYSTEM
HG	HEATING GAS	ENT	ENTERING
HR	HEATING RADIANT	EPT	EQUIPMENT
HW	HEATING WATER	ERU	ENERGY RECOVERY UNIT
HS	HEATING SOURCE	ESP	EXTERNAL STATIC PRESSURE
HT	HEATING TANK	ET	EXPANSION TANK
HW	HEATING WATER	EUH	ELECTRIC UNIT HEATER
LP	LOW PRESSURE	EVAP	EVAPORATOR (REFRIGERATION)
LPC	LOW PRESSURE CONDENSATE	EWH	ELECTRIC WALL HEATER
MP	MEDIUM PRESSURE	EWT	ENTERING WATER TEMPERATURE (°F)
MPC	MEDIUM PRESSURE CONDENSATE	EXP	EXFILTRATION AIR
MS	MEDIUM SUPPLY	EXH	EXHAUST
MP	MEDIUM PRESSURE	FA	FIRE ALARM
MP	MEDIUM PRESSURE	FCU	FAN COIL UNIT
HP	HIGH PRESSURE	FD	FIRE DAMPER
HPC	HIGH PRESSURE CONDENSATE	FF	FINISHED FLOOR
RL	REFRIGERANT LIQUID	FIN	FINISH
RS	REFRIGERANT SUCTON	FLA	FULL LOAD AMPS
		FPC	FIRE PROTECTION CONTRACTOR
		FRM	FEET PER MINUTE

* NOTE: NOT ALL PIPING LINE TYPES, SYMBOLS, OR ABBREVIATIONS ARE UTILIZED ON EVERY PROJECT.

SITE LOCATION MAP



PROJECT DESIGN CONDITIONS										
OUTDOOR DESIGN CONDITIONS	LOCATION		ZONE	SUMMER 1% (F DB / F WB)		WINTER 99% (F DB)		SE/EMC		WIND (MPH)
	SOUTHEAST, NY		5A	80.2 / 72.9		9.5		DESIGN CAT	SITE CLASS	
								B	D	
ENVELOPE CONDITIONS	AREA	LOW WALL R-VALUE	UPPER WALL R-VALUE	ROOF R-VALUE	GLASS U-VALUE		GLASS SC	PARTITION U-VALUE		
	WAREHOUSE	1.5	14 (SEE NOTE 1)		20	0.35		N/A	N/A	
APPLICABLE CODES	2020 NY STATE BUILDING CODE									
	2020 NY STATE MECHANICAL CODE									
	2020 NY STATE ENERGY CONSERVATION CODE									
LOAD ASSUMPTIONS										
ROOM DESIGN PARAMETERS	SPACE TYPE	COOLING	HEATING	PEOPLE		LIGHTING	MISC	OUTDOOR AIR		
		F / MAX RH	F / MIN RH	SOFT / PERSON	SENS. GAIN / PERSON (BTUH)	LATENT GAIN / PERSON (BTUH)	W / SQFT	W / SQFT	CFM / PERSON	CFM / SQFT
	WAREHOUSE	N/A	55	N/A	N/A	N/A	N/A	N/A	5	0.06
NOTES:										
1. WALL INSULATION PROVIDED FROM 4'-0" AFF. TO DECK ON NON-DOCK WALLS AND 12'-0" AFF. TO DECK ON DOCK WALLS.										

HVAC SHEET LIST			
SHEET NUMBER	SHEET NAME	CURRENT REVISION	CURRENT REVISION DESCRIPTION
M000	COVER SHEET	08/05/2022	BID SET
M100	OVERALL FLOOR PLAN	08/05/2022	BID SET
M101	OVERALL ROOF PLAN	08/05/2022	BID SET
M400	SCHEDULES	08/05/2022	BID SET
M500	DETAILS	08/05/2022	BID SET

SPECIFICATIONS:

SECTION 1 – HVAC CRITERIA

1.0 GENERAL

- A. THESE DOCUMENTS ARE INTENDED TO PROVIDE ALL DRAWINGS, NOTATIONS, DETAILS, AND SCHEDULES NECESSARY FOR THE INSTALLATION OF A COMPLETE HVAC SYSTEM. THESE DOCUMENTS ARE PREPARED TO EXCLUDE ALL WORK NOT SPECIFICALLY INCLUDED IN THE SET.
- B. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY LABOR AND MATERIALS FOR A COMPLETE SYSTEM TO MEET THE INTENT OF THE DESIGN AND AS INDICATED IN THE DESIGN DOCUMENTS. ANY ACCESSORIES OR MATERIALS OBSOLETELY A PART OF THE SYSTEM AND INTEGRAL IN ITS OPERATION, ALTHOUGH NOT SPECIFICALLY MENTIONED HEREIN, SHALL BE FURNISHED AND INSTALLED AS IF CALLED FOR IN DETAIL.
- C. THIS CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTING COMPLETE AND OPERATING SYSTEMS. THIS CONTRACTOR ACKNOWLEDGES AND UNDERSTANDS THAT THE CONTRACT DOCUMENTS ARE A TWO-DIMENSIONAL REPRESENTATION OF A THREE-DIMENSIONAL OBJECT, SUBJECT TO HUMAN INTERPRETATION. THIS REPRESENTATION MAY INCLUDE IMPERFECT DATA, INTERPRETED CODES, UTILITY GUIDELINES, THREE-DIMENSIONAL CONFLICTS, AND REQUIRED FIELD COORDINATION ITEMS. SUCH DEFICIENCIES CAN BE CORRECTED WHEN IDENTIFIED PRIOR TO ORDERING MATERIAL AND STARTING INSTALLATION. THIS CONTRACTOR AGREES TO CAREFULLY STUDY AND COMPARE THE INDIVIDUAL CONTRACT DOCUMENTS AND REPORT AT ONCE IN WRITING TO THE DESIGN TEAM ANY DEFICIENCIES THIS CONTRACTOR MAY DISCOVER. THIS CONTRACTOR FURTHER AGREES TO REQUIRE EACH SUBCONTRACTOR TO LIKEWISE STUDY THE DOCUMENTS AND REPORT AT ONCE ANY DEFICIENCIES DISCOVERED.
- D. ALL MATERIAL AND EQUIPMENT USED SHALL BE NEW AND FREE FROM DEFECTS.
- E. PROVIDE MECHANICAL SYSTEMS IDENTIFICATION TO INDICATE THE TAG, TYPE, FLOW, TEMPERATURE RANGE, CAPACITY, ETC. OF EACH ITEM OF EQUIPMENT AND ALL CONVEYANCES (DUCTWORK AND PIPING SYSTEMS). ALL MAJOR EQUIPMENT SHALL BE PROVIDED WITH LAMINATED PLASTIC NAME PLATES IDENTIFYING THE EQUIPMENT WITH NOMENCLATURE CORRESPONDING TO THE MARKINGS ON THE DRAWINGS. LETTERING SHALL BE 1/2" HIGH. PROVIDE ADHESIVE BACKED PLASTICIZED MARKERS FOR DUCTWORK. PIPING IDENTIFICATION TO FOLLOW ASME 13 STANDARDS. LOCATE LABELINGS TO BE ABLE TO EASILY IDENTIFY PIPING SERVICE. PROVIDE ENGRAVED BRASS OR LAMINATED PLASTIC VALVE TAGS WITH STAINLESS STEEL BALL CHAIN FASTENER. PROVIDE VALVE TAG SCHEDULE WITH CLOSURE DOCUMENTS.
- F. THIS CONTRACTOR SHALL PERFORM WORK IN A SAFE MANNER, COMPLY WITH ALL APPLICABLE OSHA SAFETY GUIDELINES IN ACCORDANCE WITH 29 CFR 1926 OSHA CONSTRUCTION INDUSTRY REGULATIONS DURING THE COURSE OF COMPLETING THE WORK DESCRIBED IN THESE DOCUMENTS.
- G. THIS CONTRACTOR SHALL KEEP AND MAINTAIN ON SITE A COPY OF ALL SAFETY DATA SHEETS FOR ALL PRODUCTS AND MATERIALS ON SITE WHICH COMPLY WITH THE GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELING OF CHEMICALS. THIS INCLUDES:
1. MAINTAINING A HAZARD COMMUNICATION PROGRAM DETAILING THE PLANS IN PLACE FOR THE SAFE HANDLING OF CHEMICALS
 2. MAINTAINING A WRITTEN CHEMICAL INVENTORY OF EVERY HAZARDOUS CHEMICAL IN THE FACILITY TO WHICH EMPLOYEES ARE EXPOSED
 3. MAINTAINING PROPER LABELS AND WARNING SIGNS ASSOCIATED WITH SAID CHEMICALS
 4. TRAINING EMPLOYEES ON CHEMICAL HAZARDS AND NECESSARY PRECAUTIONS
- H. NO CHEMICALS MAY BE STORED IN ANY CONTAINERS OTHER THAN THE ORIGINAL MANUFACTURER'S CONTAINERS.
1. INSTALL ALL ITEMS PER THE MANUFACTURER'S INSTRUCTIONS AND PROVIDE PROPER ELECTRICAL AND MAINTENANCE CLEARANCES.

1.1 COORDINATION

- A. COORDINATE THE ROUTING OF ALL MECHANICAL SYSTEMS WITH THE OTHER TRADES TO AVOID CONFLICTS WITH DUCTS, PIPES, ETC. ITEMS REQUIRING PITCH MUST BE CONSIDERED FOR THEIR RIGHT-OF-WAY.
- B. GENERAL CONTRACTOR (G.C.) SHALL PROVIDE AND INSTALL ALL PRIMARY STRUCTURAL SUPPORT, UNIFORM LEVEL, FOR ALL FLOOR, CEILING, OR ROOF MOUNTED EQUIPMENT OR COMPONENTS AS DESIGNED BY ARCHITECT OR STRUCTURAL ENGINEER AND APPROVED BY THE JURISDICTION OF AUTHORITY.
- C. THIS CONTRACTOR SHALL FIELD VERIFY LOCATION AND ELEVATION OF ALL EXISTING UTILITIES. ANY DISCREPANCIES SHALL BE RELAYED TO DBS FOR COMMENT AND CORRECTIVE ACTION AS NEEDED.
- D. ALL LINTELS, FRAMING, FURRING, PATCHING, AND PAINTING REQUIRED WILL BE PROVIDED BY THE G.C.
- E. ALL GAS PIPING EXPOSED TO WEATHER SHALL BE PAINTED BY THE G.C.
- F. THE G.C. SHALL PROVIDE ALL PADS AS REQUIRED FOR THE INSTALLATION OF THE HVAC EQUIPMENT. PADS SHALL BE PROVIDED IN ACCORDANCE WITH THE STRUCTURAL ENGINEER'S DESIGN FOR SITE CONDITIONS, WEIGHT, SEISMIC AND WIND CONSIDERATIONS. HEIGHT OF THE PAD SHALL (FOR GRAVITY DRAIN EQUIPMENT) SHALL BE FIELD ADJUSTED BY G.C. BASED ON APPROVED EQUIPMENT SUBMITTALS.
- G. E.C. SHALL MOUNT AND WIRE/CONNECT ALL 460 VOLT AND 120 VOLT COMPONENTS (RELAYS, FAN WIRING, HIGH LIMITS, SOLENOIDS, CONTROLLERS, ETC.) AND OTHER ELECTRICAL COMPONENTS FURNISHED BY THIS CONTRACTOR. THIS CONTRACTOR IS RESPONSIBLE FOR ALL 24 VOLT THERMOSTAT WIRING.

1.2 CONSTRUCTION

- A. ALL EQUIPMENT, PIPING SUPPORTS, AND DUCTWORK SUPPORTS SUSPENDED FROM ROOF JOISTS SHALL BE SUSPENDED FROM THE TOP CHORD OF THE JOIST UNLESS PRIOR APPROVAL FROM G.C. OR STRUCTURAL ENGINEER.
- B. PROVIDE DUCT, PIPING AND HANGER PENETRATIONS THROUGH NON-RATED ENCLOSURES WITH DRAFT STOPPING OR SMOKE BARRIER SEALANT SYSTEMS. INSTALL PENETRATION SEALANT SYSTEMS IN STRICT ACCORDANCE TO MANUFACTURER'S APPLICATION DETAILS AND INSTRUCTIONS. PROVIDE DRAFT STOPPING OR SMOKE BARRIER SEALANTS TO MEET APPROVAL OF AHJ.
- C. LOCATE AND PROVIDE SCHEDULE 40 STEEL SLEEVES AT ALL CONCRETE PENETRATIONS THROUGH WALLS AND FLOORS PRIOR TO CONCRETE BEING POURED. THIS SUBCONTRACTOR WILL BE RESPONSIBLE TO CORE DRILL ANY HOLE THAT IS NOT LOCATED PRIOR TO CONCRETE POURING, IN WHICH CASE A SLEW OF CONCRETE SHALL BE REMOVED TO PROVIDE MINIMUM 1" CLEARANCE AROUND ENTIRE PERIMETER OF PIPE. CULK ANNUAL SPACE WATERIGHT; PROVIDE A LINK SEAL THROUGH ALL PENETRATIONS LOCATED BELOW GRADE.

1.3 ACTION SUBMITTALS

- A. PRODUCT DATA:
1. FOR ALL EQUIPMENT FURNISHED BY THIS CONTRACTOR
(1) SHOP DRAWINGS INCLUDING AT A MINIMUM: CAPACITIES, DIMENSIONS, WEIGHTS, ELECTRICAL REQUIREMENTS, FAN AND PUMP CURVES
2. METAL DUCTS
(1) LINERS AND ADHESIVES
(2) SEALANTS AND GASKETS
3. PIPING
(1) PIPING SPECIALTIES
(2) VALVES
(3) PRESSURE REGULATORS
(4) PIPING SPECIALTIES ITEMS

1.4 INFORMATIONAL SUBMITTALS

- A. BRAZING AND WELDING CERTIFICATES
- B. FIELD QUALITY-CONTROL REPORTS
- SECTION 2 - FIELD QUALITY CONTROL**
- 2.0 GENERAL**
- A. REFER TO PIPE SCHEDULE FOR PIPE TESTING REQUIREMENTS.
- B. EQUIPMENT THAT IS NOT INTENDED TO BE SUBJECT TO THE TEST PRESSURE SHALL BE ISOLATED FROM THE PIPING. IF A VALVE IS USED TO ISOLATE THE EQUIPMENT, ITS CLOSURE SHALL BE CAPABLE OF SEALING AGAINST THE TEST PRESSURE WITHOUT DAMAGE TO THE VALVE. FLANGED JOINTS AT WHICH BLINDS ARE INSERTED TO ISOLATE EQUIPMENT NEED NOT BE TESTED.
- C. PIPE PRESSURE TEST REPORTS ARE REQUIRED AS PART OF THE PROJECT CLOSE OUT DOCUMENTS AND ARE TO INCLUDE WITNESS SIGNATURES. A WRITTEN FIELD PRESSURE TEST DECLARATION SHALL BE PREPARED DOCUMENTING THE FIELD TEST PROCEDURE AS REQUIRED BY APPLICABLE CODE AND PROVIDE TO NDBS AND THE BUILDING INSPECTOR PRIOR TO FINAL APPROVAL.
- D. DURING PRESSURE TESTING, VERIFY THAT STRESS DUE TO PRESSURE AT BOTTOM OF VERTICAL RISERS DOES NOT EXCEED 90% OF SPECIFIED MINIMUM YIELD STRENGTH OR 1.7 TIMES "SE" VALUE AS LISTED IN ASME B31.9.

SECTION 3 – EQUIPMENT TESTING AND START-UP

3.0 GENERAL

- | | | |
|----|--|--|
| A. | PRIOR TO START-UP PROCEDURES, SUBMITTAL DOCUMENTATION SHALL BE VERIFIED FOR COMPLETENESS AND CORRECTNESS AS IT APPLIES TO ALL INSTALLED EQUIPMENT BASED ON THE CURRENT CONTRACT DOCUMENTS. | |
| B. | SUBMITTALS SHALL BE COMPARED TO ALL INSTALLED EQUIPMENT AND VERIFICATION MADE THAT EACH DOCUMENT MATCHES THE FINAL INSTALLATION. THE FOLLOWING ITEMS SHALL BE SPECIFICALLY VERIFIED:
1. TAGGING OF EQUIPMENT AND MODEL NUMBER IS CONSISTENT WITH DOCUMENTS, SUBMITTALS AND NAMEPLATE DATA.
2. PHYSICAL DIMENSIONS COINCIDE WITH INSTALLATION INCLUDING SERVICE CLEARANCES.
3. SHIPPED LOOSE ACCESSORIES ARE PROPERLY INSTALLED. | |
| C. | THIS CONTRACTOR SHALL FILL OUT ALL MANUFACTURER START-UP SHEETS AS A CLOSE OUT DOCUMENT | |

NDBS
NATIONAL
DESIGN / BUILD
SERVICES

11840 Borman Dr.
St. Louis, MO
63146
P: 636.229.8400
F: 636.229.8416

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